

## II. Remarks

Reconsideration and allowance of the subject reissue application are respectfully requested.

Claims 1-35 are pending in the application. Claims 1, 6, 8, 14, 15, 16, and 21 are independent.

The undersigned and Applicants' U.S. in-house patent counsel, Mr. Rick Musgrave, would like to thank Examiner Kerns for the cordial and productive interview of June 28, 2005. The Examiner's helpful comments and suggestions were instrumental in preparing this response.

Applicants have now added new Claims 26-35 to afford themselves a scope of protection commensurate with the disclosure. The new claims are fully supported in the specification and Drawings, and are believed to be allowable for the reasons that original Claims 1-9 were allowed. Support for the new claims may be found in Fig 4B and in the specification, inter alia, at Column 2, lines 16-40, and at Column 4, lines 34-62.

1. As discussed at the interview, the Office Action states that the reissue oath/declaration is defective, but also states that this declaration "is proper." Applicants submit that the Reissue Declaration filed November 13, 2003 fully complies with 35 USC 251, 37 CFR 1.175, and MPEP 1414. In particular, the declaration states:

4. We believe that the original above-identified U.S. patent is partly

inoperative by reason of our having claimed more or less than we had the right to claim in that patent. The error in the issued patent is a potential ambiguity in Claim 5. ***Claim 5 is a multiple dependent claim which depends upon another multiple dependent Claim 4, in apparent violation of 37 CFR 1.75(c).***  
(emphasis supplied)

Applicants submit that this is in accord with MPEP 1414, which states:

In identifying the error, it is sufficient that the reissue oath/declaration identify a single word, phrase, or expression in the specification or in an original claim, and how it renders the original patent wholly or partly inoperative or invalid.

Applicants are uncertain how to respond to the observation that the Second Preliminary Amendment filed September 27, 2004 "lacks a reissue oath/declaration." Every Preliminary Amendment does not require a separate reissue declaration.

The Reissue Declaration issues should be obviated by Applicants' filing of a Supplemental Reissue Declaration after allowable subject matter has been indicated in the claims. In particular, as specified in MPEP 1414.01, before allowance Applicants will submit a supplemental reissue declaration stating that all errors corrected in the application throughout prosecution were made without

deceptive intent, and providing more particulars as to the problem with original Claim 5.

2. Applicants respectfully traverse the rejection of Claims 16-25 as being based on a defective reissue declaration for the reasons noted above.

3. As discussed at the interview, Applicants respectfully traverse the rejection of Claims 16-25 as being based upon new matter. The "angled" surfaces (preferably angled at substantially 90 degrees) are clearly shown in Fig. 4B. It is clear that drawings alone may provide proper "written description" of an invention required by 35 USC 112. *Vas-Cath Inc. v. Mahurkar*, 19 USPQ2d 1111 (Fed. Cir. 1991).

4. As discussed at the interview, while traversing the rejection of Claims 14-25 under 35 USC 251, and solely to rapidly advance this case to issue, these claims have been amended to include the phrase, "a limited amount of metallic material."

5. The drawings were objected to for the reasons noted at pages 4-5 of the Office Action. As discussed at the interview, Applicants respectfully traverse this objection.

37 CFR § 1.81(a) requires drawings only "**where necessary for the understanding of the subject matter sought to be patented.**" Applicants respectfully submit that the person of ordinary skill in this field readily understands the structure of "a mold" without the necessity for a drawing

showing such well known structure. Indeed, the parent patent issued without such a requirement. Furthermore, the Office Action and cited art make clear that the Examiner fully understands the structure encompassed by this phrase. Accordingly, Applicants respectfully submit that the drawings are in compliance with 37 CFR 1.81.

6-8. As discussed at the interview, Claims 1-25 were rejected under 35 USC 103(a) as being obvious over Perrella, for the reasons noted at pages 6-7 of the Office Action. Applicants respectfully traverse this rejection. The Office Action states that:

One of ordinary skill in the art would have recognized that, during the injection process, the gap of about 1/32 inch would become filled with injected molten metal material to form a seal in the seat portion, as the molten metal flows through the channel in the vicinity of the interfacing surface of the nozzle and sprue bushing.

First, Applicants respectfully submit that the Office Action does not set forth a *prima facie* case of obviousness in that Perrella fails to disclose or suggest that **any** molten material would, in fact, enter the 1/32 inch gap. This is mere speculation on the Examiner's part, and Applicants respectfully request an Affidavit from the Examiner or some other evidence that Perrella operates as the

Examiner supposes. See MPEP 706.02(j).

Second, Perrella discloses a gap between the nozzle seat 42 and the adapter 24, but fails to disclose or suggest any gap between a nozzle and a sprue bushing, as claimed in the present invention.

Third, and perhaps most importantly, in Perrella both the nozzle seat 42 and the adapter 24 are on the hot side of the mold. Therefore, any molten product in the gap therebetween would remain molten and thus fail to **solidify** and form a **seal**, as claimed in the present invention.

In greater detail, the present invention provides a substantially leak-free connection between an injection nozzle and a mold sprue bushing in a metal *injection molding system*. By contrast, Perrella is directed to solving the problems of expediting nozzle maintenance and reducing heat flow between the nozzle and a seat provided in the mold (column 1, lines 39-41) in a *die casting system*.

As shown with reference to FIG. 2, Perrella describes a connection between a mold, provided between a pair of die inserts (18, 20), and a nozzle (22) wherein the die inserts (18, 20):

simultaneously move towards and away from the parting line so as to engage and disengage the nozzle (22) (column 1, line 46-47).

The mold lacks a mold sprue bushing and instead provides the connection, as shown with reference to FIG. 2, between the nozzle (22) and a seat configured in the mold, wherein the nozzle having:

a rectangular flange 46 which presents a diamond shaped, [having a] narrow contact strip 48 that is engaged by the mating surfaces 50 in the die inserts 18 and 20 (column 2, line 24-28).

Perrella does not elaborate upon the nature of the connection between the contact strip 48 and the mating surfaces 50. However, it is believed that an intimate sealing contact therebetween can be reasonably construed in view of the use of "contact" in "contact strip 48" and the absence of a gap therebetween with reference to FIG. 2.

Applicants respectfully submit that Perrella describes a circumferential gap, reference to FIG. 1, as being provided between the nozzle (22) and an end of the nozzle adapter (24) that interconnects the nozzle (22) with a gooseneck (12) to form an injection assembly, for a die casting system, when secured together through the use of clamps (26, 28), whereby:

the surface area of the terminal end 44 is quite small relative to the size of the adaptor and accordingly there is

minimal heat transfer between the adaptor 24 and the nozzle 22 (column 2, line 19-23)

and:

the seat 42 of the nozzle to float on the surface of the adaptor 24 within a given **tolerance**, say 1/32 inch (column 2, line 38-40; emphasis supplied).

In view of the foregoing, the Applicants respectfully submit that the Examiner in paragraph 8 has misconstrued Perrella in suggesting that a sprue bushing is in fact present, and that the gap is taught between the nozzle and a sprue bushing. The Applicants believe that Perrella does not describe a nozzle (e.g., 13'') having a spigot portion (e.g., 26), nor a sprue bushing (e.g., 16'') including a channel (e.g., 27), and that the spigot portion and channel are configured to cooperate in providing a gap therebetween that permits a limited amount of metallic material to enter the gap and solidify to form a seal.

Moreover, the gap in Perrella is provided between hot components of the injection assembly, between the nozzle (22) and the adapter (24). Applicants believe that those skilled in the art of die casting would understand that any limited amount of molding material that , assuming *arguendo*, seeps into the gap would not become cool enough to form a seal **during injection**. By contrast, the gap in the present

invention is again provided between the hot nozzle and the relatively cool mold sprue bushing to provide solidification and a seal *during injection*.

It is submitted that the presently amended claims 1-35 are not obvious under the test in ***Graham et al. v. John Deere Company***, 148 USPQ 459 (US Sup. Ct., 1966). "First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings." ***MPEP 2142***. A person having ordinary skill in the art would not fill the tolerance area (Col. 2, Lines 38-40) in Perrella with a "limited amount of metallic material" as claimed by the Applicants because the reason for said tolerance area in Parella is for heat dissipation and filling this area would promote heat transfer. Applicants' claimed invention teaches a gap for filling with a limited amount of metallic material to promote a good seal. Parella teaches away from the Applicants' claimed invention and, hence, the first prong for a prima facie case of obviousness is missing.

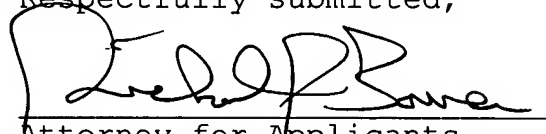
Accordingly, the salient claimed features of the present invention are nowhere disclosed by the cited art, whether that art is taken individually or in combination.



In view of the above, it is believed that this application is now in condition for allowance, and a Notice thereof is respectfully requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3507. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Richard P. Bauer", written over a horizontal line.

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